

IN THE DRAWINGS

Applicants submits Replacement Sheets Nos. 1-10 containing Figures 5, 9, 11-17 and 19 and reflecting corrections made to Figure 5, 9, 11-17 and 19.

REMARKS

Applicants respectfully request consideration of the subject application. This Response is submitted in response to the Office Action mailed February 23, 2007. Claims 1-14 and 27 are pending. Claims 1-14 and 27 are rejected. In this Amendment, claims 1, 5-14 and 27 have been amended. No new matter has been added.

Objections to the Specification

The Examiner objected to the specification because the application did not contain an abstract of the disclosure as required by 37 CFR § 1.72(b). An Abstract on a separate sheet of paper is provided herewith.

The Examiner also objected to the disclosure, asserting "DETAILED DESCRIPTION OF THE PREFERRED FORMS" should be "DETAILED DESCRIPTION OF THE DRAWINGS." Applicants have amended the specification as suggested by the Examiner.

Accordingly, Applicants request withdrawal of the objections to the specification.

Objections to the Drawings

The Examiner objected to the drawings for not showing every feature of the invention specified in the claims. Applicants submit Figures 5, 9, 11-17 and 19, showing all of the claimed features. Applicants have also amended the BRIEF DESCRIPTION OF THE FIGURES to be consistent with the drawings. Accordingly, Applicants request withdrawal of the objections to the drawings.

Claim Objections

The Examiner objected to claims 1, 6, 7, 10, 11, 14 and 27 because of various informalities. Applicants have amended the claims in accordance with the Examiner's suggestions, with the exception of paragraph 5.

Paragraph 5 requests that Claims 1 and 6 be amended such that "generating undominated profile pairs" is changed to "generating an undominated profile pairs," unless otherwise explained. In response, the amendment was not made because here the singular indefinite article ("an") does not agree with the plural subject ("pairs").

The Examiner also objected to claim 5 stands as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants disagree.

Claim 5 is drawn to “identifying all possible profile pairs;” in contrast, claim 1 only recites “identifying profile pairs”. Hence, the scope of claim 5 is broader than claim 1. Nevertheless, Applicants have amended claim 5 by deleting the words “all possible” in connection with “identifying profile pairs” in order to advance prosecution of the application.

Accordingly, Applicants request withdrawal of the objections to the claims.

35 U.S.C. § 112 Rejections

The Examiner has rejected claims 1-13 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The claims have been amended to overcome the Examiner’s rejections.

In particular, the Examiner submits that “instantiated” in “each criterion instantiated with one of the categories for that criterion” of claim 1 is indefinite or lacks antecedent basis because it is not clear what “instantiated” means.

Applicants have amended the claims to replace “instantiated” with “associated.”

The Examiner also submits “generating a set of undominated profile pairs with z criteria each” is unclear. Applicants have amended claim 6 to delete “a set of” from claim 6 and claims depending from claim 6.

The Examiner also submits that in claims 6 and 8 that it is unclear whether “each” refers to the set or the profile. Applicants have amended claims 6 and 8 to clarify that “each” refers to the profile.

The Examiner also submits the “further value of z” in claim 7 is unclear. The “further value of z” is “any other” value of z. Claim 6 provides that “z is a number greater than or equal to two and less than or equal to the number of possible criteria.” Claim 7 has been amended to recite “any other value of z.”

The Examiner also submits “uninstantiated” and “instantiated” in claims 8 and 9 are unclear. Applicants have removed “uninstantiated” and “instantiated” from the claims.

Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 112.

35 U.S.C. § 101 Rejections

The Examiner has rejected claims 1-14 and 27 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

The Examiner submits claim 27 constitutes software modules devoid of any apparent hardware. Applicants have amended claim 27 to overcome the rejection.

The Examiner also submits claims 1-14 and 27 fail to provide a tangible result. Applicants disagree.

Claim 1 requires: “solving a system of equalities/inequalities that represents the ordinal pairwise rankings of profile pairs to obtain at least one output.” Applicants submit that the at least one output is a useful, concrete and tangible result.

Claim 2 also requires generating a point value for each category on each criterion. As explained present application, point values represent the relative weights of the criteria used in Additive Points Systems (APSs). APSs are a type of multi-attribute utility or value model or multiple criteria decision analysis tool (also variously known as ‘linear’, ‘point-count’ and ‘scoring’ systems) that are widely and increasingly used worldwide, for example, to prioritize patients for access to medical treatment, to select immigrants, and to rank students applying to medical, dental and pharmacy schools, etc. In general, if the criteria and the categories on each have been chosen for a particular APS, then the point values for that APS must be determined; otherwise, the APS cannot function.

In addition, claim 3 requires generating a ranking of all possible profiles that can be represented by an APS, and claim 4 requires generating a ranking of a subset of all possible profiles. As explained in the present application, APSs serve to combine the features or performance of an alternative on multiple

criteria to produce a single ranking of alternatives, comprising either all possible profiles or a subset, with respect to an over-arching criterion. An example of such a ranking is the order in which to treat patients. Another example is determining which immigration applicants to admit to a country. A third example is the determination of the best site for a building relative to other sites being considered.

Applicant respectfully submits that such outputs of the invention, namely point values and rankings of all possible profiles or of a subset of all possible profiles, as noted in the claims, are also useful, concrete and tangible.

Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 101.

35 U.S.C. § 103 Rejections

The Examiner has rejected claims 1-14 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereinafter APA).

Claims 1-14 and 27 are drawn to a decision support method for performing an ordinal pairwise ranking of profile pairs by a decision maker and solving a system of equalities/inequalities that represents the ordinal pairwise rankings to obtain point values or rankings. APA teaches pairwise rankings in an interval scale or ratio scale. Allegedly, it would be obvious to a person with

ordinary skill in the art at the time the invention was made that ratio scale or interval scale can easily be converted to ordinal scale, and one would have been motivated to do so because an ordinal scale can easily be ranked.

Applicants respectfully draw to the attention of the examiner the difference between pairwise ranking of profiles pairs, as for the invention (explained in its claims and description), and the pairwise ranking of criteria, as for the APA. See Background to the Invention, page 3, L 18: “The second existing approach [i.e. APA] to calibrating APSs uses decision makers’ judgments of the pairwise relative importance of the APS’s criteria to derive ratio scale weights.” Profile pairs and criteria are different things.

As set out for example in Claim 1, ‘profiles’ comprise two or more of the criteria, where each criterion is associated with one of the categories for that criterion. In other words, as explained in the description, a profile comprises the categorical ratings of a real or hypothetical alternative on the chosen criteria for the Additive Points System (APS) being used. An example of a profile for an alternative defined on an APS with three criteria is, in general terms: category 3 on criterion a, category 1 on criterion b and category 4 on criterion c.

As noted above, the invention concerns the pairwise ranking of profile pairs, such as pairwise ranking the illustrative profile described above relative to another profile (real or hypothetical) such as: category 1 on criterion a, category 3

on criterion b and category 2 on criterion c. That is, pairwise ranking these two profiles concerns the decision maker pairwise ranking (category 3 on criterion a, category 1 on criterion b and category 4 on criterion c) relative to (category 1 on criterion a, category 3 on criterion b and category 2 on criterion c). In contrast, the APA simply concerns pairwise rankings of two criteria, such as criterion a relative to criterion b, or criterion a relative to criterion c, or criterion b relative to criterion c.

Thus, in the present context, a key difference between the invention and the APA is that the invention involves the pairwise ranking of profiles, whereas the APA involves the pairwise ranking of criteria. Profiles and criteria are different things. Pairwise ranking profiles and criteria, respectively, requires different methods.

Accordingly, applicants respectfully assert that it is not the case that any such ranking of criteria can be easily converted to pairwise ranking of profile pairs. Furthermore, we respectfully assert that the method by which the invention performs the action of pairwise ranking profile pairs, as explained in Claims 1-14 and 27, is not obvious.

In order to obtain point values or overall rankings of alternatives, the invention enables a decision maker to arrive at a pairwise ranking for potentially all $N(N - 1)/2$ profile pairs, where N can be all possible profiles representable by

the Additive Points System (APS, as referred to earlier) being used. Most importantly with respect to arguing that the invention is not obvious, the invention arrives quickly at a pairwise ranking for potentially all $N(N - 1)/2$ profile pairs in such a way that the number of pairwise profile rankings that the decision maker must explicitly decide is minimized. This means that the decision-making burden on the decision maker is as low as possible, and therefore the method is as practicable (or 'efficient') as possible. As set out in Claims 1-14 and 27 and the description, the key processes of the invention may be characterized, in general terms, as follows.

Each and every time that a pairwise ranking of profile pairs (either strict preference or indifference) is decided by the decision maker, its corollaries in terms of other pairwise rankings that are implied by that explicit pairwise ranking (together with earlier explicit pairwise rankings) are systematically identified. Ultimately, every corollary (implied pairwise ranking of profiles) is identified. These implied pairwise rankings of profiles arise as a result of the mathematical properties of APSs in particular. The invention follows an analytical approach (as distinguished from a statistical approach, for example), whereby potentially all $N(N - 1)/2$ profile pairs are, effectively, 'checked off' individually as having been ranked.

Because all such pairwise rankings of profiles that are implied by the decision maker's explicit pairwise rankings of profiles are identified, the invention systematically directs the decision maker to ranking independent pairs of profiles only (i.e., ones not implied by explicit pairwise rankings). This serves to minimize the number of explicit pairwise ranking that must be performed by the decision maker, thereby minimizing her/his decision-making burden. The novelty of the invention is reflected by the minimization of the number of explicit pairwise rankings required of the decision maker in order to arrive at a pairwise ranking for all possible pairs of profiles. From the system of explicit pairwise rankings of profiles (alternatives) is derived the point values or the overall ranking of alternatives (both as mentioned above).

Note, in particular, that the invention is currently the only way of identifying these implied pairwise rankings of profiles on the scale noted above (i.e., every implied pairwise ranking) such that the decision maker's burden is minimized.

In summary, the invention enables a decision maker to arrive quickly at a pairwise ranking for potentially all $N(N - 1)/2$ pairs of profiles, where N can be all possible profiles representable by the APS under consideration or a subset of those alternatives, while minimizing the number that the decision maker must explicitly rank so that the decision-making burden on her/him is as low as

possible, and therefore the method is as practicable as possible. The invention is not obvious to a person with ordinary skill in the art.

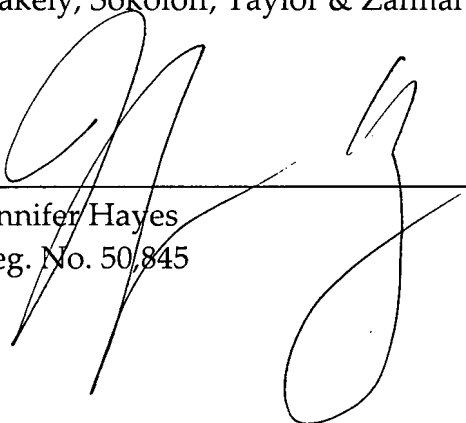
Thus, the cited art fails to teach or suggest all of the limitations of independent claims 1, 14 and 27. Claims 2-13 depend, directly or indirectly, from one of the foregoing independent claims. Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 103.

Applicants respectfully submit that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Jennifer Hayes at (408) 720-8300.

Please charge any shortages and credit any overages to Deposit Account No. 02-2666. Any necessary extension of time for response not already requested is hereby requested. Please charge any corresponding fee to Deposit Account No. 02-2666.

Respectfully submitted,
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